

SEQUENCE LISTING
JC20 Rec'd PCT/PTO 14 OCT 2009

SEQ ID NO.: 1: BFA4 cDNA

ATGGTCCGGAAAAAGAACCCCCCTGAGAAACGTTCAAGTGAAGGCAGGGCCAGATCCTGGAGCCTATAGGTACAGAAAGCA
 5 AGGTATCTGGAAAGAACAAAGAATTCTCTGCAGATCAGATGTCAGAAAATACGGATCAGGTGATGCTGCAGAAACTAAATCATAAGG
 AGGAACATAGCTTCATGTTCAAGATCCATCTTAGCAGTAAGAAGGACTTGAAGAAGCGCAGTTCTGAGTGAGAAGGCTGGCTTC
 ATTATGAAAGCCCCAGTAAGGGAGGAAACTTCCCTCTTCCGATGATGAGGTGACAGACAGAAATATGTTGCTTCATTTC
 CAGCTGCTGGGGAGTCTGTGAGCCCTGAGTCAGCTCGCAAAGACAGAGGAGCAGATGACCTCAAGATATGGCTGCACCCCTCAG
 GGGACTCACTGGAGACAAAGGAAGATCAGAACAGATGTCACCAAAGGCTACAGAGGAAACAGGGCAAGCACAGAGTGGTCAAGCCAATT
 10 GTCAAGGTTGAGGCCAGTTCACTGGCCTCAAAAACCCACAAGTCAGTCAGATGGGGTGTAAAGACTGAATAAATCCAAAATCTG
 ACTTACTGGTGAATGACAACCCAGACCCGACCTCTGCTCCAGCAGCTTCAGGACTTAAATGCAATATCTGTTGATATGGTACT
 ACGGAACGACCCACAGATCTGATTAAGCACTTCGAAAGTATCACTTGGACTGCAAAACCGCACCCAGGAAAGTCTGAGCTGG
 ACAGCAAAATCTTGGCCCTCATAACATGGTCAGTTAGCCATTCAAAGACTTCAGAACGGTCAACCCTGTGTTCTGGT
 TGCTGAGGACATCAATTCTCAAGGCTGTTACTAAATGGGACCTATGATGTCAGGTGACTTCAGGTGAAACATTCTGGCA
 15 TTGGACGGAAAACACCAAGATTGCAAGGGAACACCAAGTATTCCGCTGAAATTCTGCAATTCACTTATATGGCAACTCATCCA
 CCGAATTAGAACACATTTCTCAGACTCACCAAACAAAATAAGCTCTCCCTCTGAGGTTGCAAACACCTTCAGAGA
 AAAACTCTAACAAAGTCCATCCCTGCACTTCATCCAGTGTATTCTGGAGACTTGGGAAAATGGCAGGACAAGATAACAGTCACAGCAG
 GAGATGACACTCCGTGGTACTCAGTGCCTAAAGCCCTCGATTCTCTAGACAAAATGGTACAGAGGCCACCGTACTACT
 GGTGAAATTGGTAGTTCACTGTGAGTCATCTAGCTCACTTAAACTGCTAGAACATTATGGCAAGCAGCACGGAGCAGTGCAGT
 20 CAGGGCCCTTAATCCAGAGTTAACATGATAAGCTTCCAGGGGCTCTGCTTAAATCAGAACATGATCTAGCAAAGTTCTGAGAGGAG
 AGACAATGACCAAGACAGACAAGAGCTCGAGTGGGCTAAAAAGAAGGACTTCTCCAGCAAGGGAGCCGAGGATAATATGGTAACGA
 GCTATAATTGTCAGTTCTGTGACTTCGATATTCAAAGCCATGGCCCTGTGTAATTGAGTGGGCACTTCTCCGTATTATC
 AACAGCTCCATAACATTCAAAAGTGTACCAATTAAACTGTCCATTCTGCCCAGAGGACTTGCAGGCCAGAAAAGCACCTGGAG
 AAATTACTTATCCGTTGCTGTAGAAAAAGTAATTGTCCTCACTGTGCACTTGTCTCTGCACTTGTCTCTGGCGGCTGGAA
 25 GCTCCGAGTCAAACATCAGTGCATCAGTGTTCATTCAACCACCCCTGACGTAGATGACTCTCTCTTCACTATGAAAGTGTGCA
 AGTCCAAGCATCGGATGTCAAACAGAACGAAATCACCTGCAAGGATCGATGGCAGCAGTGTCAAGGAAAGCAAAGAACACT
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 AGTGCAGTTTACAGCTGCCGATCTCAGTCACTACTGGAGCACTTCAAACTGTTCACTGCCAGGAACAGGACATCACTACAGCA
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 30 CTAAAATGGGAGAGGCCAGTTCTGAGAGTGTGGTGAAGAGAGAGAACGCTGGAAGAGAACGAGGACGGGCTCAAAGAGAAAGTTGGACCG
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 GGCTGCTGACGCCCTGTGCTGGCACCCAGAGCAGACAAAGACTCTAACGGGATAGTCCCAGTGTGAGGCGCCCATCTGGCGCAG
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 35 GCCTGACCACAAAGACCTCTCTGGCGAAAGAACATGCAATGGGGATATGTATGCAACCGTGTCCTCTACAGAAAGCTTCACT
 CGACTCCCAGGCCCTTAAACATCATTAAACAAAACAACGGTGAGCAGATTATTAGGAGGAGAACAGAACGCGCTTAACCCAGAGG
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 40 AAAGTACTGGAGATCCAGGAATAGTTCACTGGTATCTGAAAGGGAAAGGAAGTCTGAGAGAGGAGTCCTATAGAAAAGTACATGA
 GACCTGCAACACCCAAATTATTCAACCACCCAGGAGCCATTGAAAAGTACAGTACCCACTTTGGACTTCCCTTGACATA
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 ATGACATTCTCTAGATTGGCGATCAAGCATTGGCCAAGTGCACAGGAGAACGAGGAGAACAGAAGGCCAC
 45 CAAATGAAAAAGTGAAGGCTCTGAATGTAAGTAAACAGAGAAAGTGTAGAGAACGACTCAAGATGAACCTTCAACAAAATGTG
 TGCACTGTGGCATGTCCTTCIGGATGAAGTGTATGTTGCATATGAGTTGCACATGGTGAAGTGGACCTTCCAGTGCAGCA
 TATGCCAGCATTTGCACGGACAAATATGACTTCACAAACACATATCCAGAGGGCCTGCATAGGAACAATGCAACAGTGGAAAAAA
 ATGGAAAACCTAAAGAGTAA

SEQ ID NO.: 2: BFA4 Amino Acid Sequence

MVRKKNPPLRNVASEGEGQILEPIGTEKVSGKNKEFSADQMSENTDQSAAELNHKEEHSLHVQDPSSS
 SKKDLKSAVLSEKAGFNYESPSKGNNFPSFPHDEVTRNMLAFSFPAAGGVCEPLKSPQRAEADDPQDMA
 5 CTPSGDSLETKEDQKMSPKATEETGQAQSGQANCQGLSPVSVASKNPQVPSDGGVRLNKSKTDLVNDNP
 DPAPLSPELQDFKCNCIGYGYGNDPTDLIKHFRKYHLGLHNRTTRQDAELDSKILALHNMVQFSHSKDFQ
 KVNRSVFSGVLQDINSSRPVLLNGTYDVQVTSGGTFIGIGRKTPDCQGNTKYFRCKFCNFTYMGNSSTEL
 EQHFHQTHPNKIKASLPSSEAKPSEKNSNKSIPALQSSDSDGLKWLWQDKITVKAGDDTPVGYSVPIKPL
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 10 EGETMTKTDKSSSGAKKKDFSSKGAEADMVTSYNCQFCDFRYSKSHGPDVIVVGPLLRYQQLHNIHKCT
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 FHYEVHESQASDVQKEANHLQGSDQQSVKESKEHSCTKCDFITQVEEEISRHYRAHSCYKCRQCSFT
 AADTQSLLEHFNTVHCQECDITTANGEEDGHAIISTIKEEPKIDFRVYNLLTPDSKMGEPVSESVVKREKL
 15 EEKDGLKEKVWTESSSSDDLRLNVTWRGADILRGSPSYTQASLGLTPVSGTQEQTKTLRDSPNVEAHLAR
 PIYGLAVETKGFLQGAPAGGEKSGALPQQYPASGENKSKEQSQSLRRRRSGSGVFCANCLTTKTSLWRKN
 ANGGYVCNACGLYQKLHSTPRPLNIKQNNGEQIIRRTRKRLNPEALQAEQLNKQQRGSNEEQVNGSPL
 ERRSEDHLTEHQREIPLPLSKYEAQGSLTKSHSAQQPVLVSQTLDIHKRMQPLHIQIKSPQESTGDPG
 NSSVSEGKGSERGSPIEKYMRPAKHPNYSPPGSPPIEKYQYPLFGLPFVHNDQSEADWLRFWSKYKLS
 VPGNPHYLSHVPGLPNPCQNYVPYPTFNLPPHFSAVGSNDIPLDЛАIKHSRPGPTANGASKEKTKAPPN
 20 VKNEGPLNVVKTEKVDRSTQDELSTKCVHCGIVFLDEVMYALHMSCHGDSPFQCSICQHLCTDKYDFTT
 HIQRGLHRNNAQVEKNGKPKE

SEQ ID NO.: 3: BCY1 cDNA Sequence

ATGGCCGAGCTGGCCTGAAGGGCAGCACGCAACACCACGGAGTGTGTTCCCGTCCCCACCTCCGAGCACGTGGCCGAG
 25 ATCGTGGGCAGGAAGGCTGCAAGATTAAAGGCCCTGAGGGCCAAGACCAACACCTACATCAAGACACCGGTGAGGGGC
 GAGGAACCAGTGGTCATGGTGACAGGGCGACGGGAGGTGGCCACAGCCGGGGAAATCATCTCAGCAGCGGAG
 CACTTCTCCATGATCCGTGCCCTCCCGAACAAAGTCAGGCGCCGCCCTTGGTGTGGCTCTGCTCTGCCCGGCCAGGTG
 ACCATCCGTGTGCCGGTGCCCTACCGCGTGGTGGGCTGGTGGGGCCCAAAGGGCAACCATCAAGCGCATTCCAG
 CAGCAAACCAACACATACTACATTACACACCAAGCCGTGACCGCACCCGTGTCAGATCACGGGTGCCACTGGCAAGATCCTGAGTACAACAAATGAAAAC
 30 GTGGAGCGTGC CGCGAGGGAGATCGAGACGCACATCGCGTGC ACTGGCAAGATCCTGAGTACAACAAATGAAAAC
 GACTTCCTGGCGGGAGCCCCGACGCAATCGATAGCCGTA CTCCGACGCCCTGGCGGGTGCACAGCCGGCTGC
 AAGCCCCTCTCACCTCCGGCAGAACAGCCTGGCTGCATGGCAGTGGAGTGGACTCTGGCTTGAGGGCCCA
 CGCCTGGGTGAGCAGGGCGGGACTTTGGCTACGGGGTACCTCTTCCGGCTATGGCGTGGGCAAGCAGGATGTG
 TACTACGGCGTGGCCGAGACTAGCCCCCGCTGTGGCGGGCAGGAGAACGCCACGCCACCTCCGTGCTCTCTCC
 35 TCTGCCTCCCTCCCTCCTCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCC
 CGGGGACCCGAGCTGGCGGACTCCCGAGGCGCCCCCGGGAGAGCCGCTCAGGGCTCTCTAAACTTGGTGGGGC
 GCCCTGCGGAGCCCCGGCGGGCGGGGATTGCAATGGTCTGCTTGGAGAGCGAAGTGACTGCCGCCCTGTGCCACATC
 GGACACAAACCTGTTCTGCATGGAGTGTGCAGTACGCATCTGCAGAGGAGCCAGAGTGTCCCGTCTGCCACATC
 ACAGCCGCGCAAGCCATCCGAATATTCTCCCAA

SEQ ID NO.: 4: BCY1 Amino Acid Sequence

MAELRLKGSS NTTECVPVPT SEHVAEIVGR QGCKIKALRA KTNTYIKTPV RGEPEVFMVT GRREDVATAR
 REIISAAEHF SMIRASRNKS GAAFGVAPAL PGQVTIRVVR PYRVVGLVVG PKGATIKRIQ QTNTYIITP
 45 SRDRDPVFEI TGAPGNVERA REEIEITHIAV RTGKILEYNN ENDFLAGSPD AAIDSRYSDA WRVHQPGCKP
 LSTFRQNSLG CIGECGVDSG FEAPRLGEQG GDFGYGGYLPGYGVGKQDV YYGVAETSPP LWAGQENATP
 TSVLFSSASS SSSSSAKARA GPPGAHRSPA TSAGPELAGL PRRPPGEPLQ GFSKLGGGGL RSPGGGRDCM
 VCFSEVTAALVPCGHNLFC MECAVRICER TDPECPVCHI TAAQAIRIFS

SEQ ID NO.: 5: BFA5 Nucleotide Sequence

ATGACAAAGAGGAAGAAGACCATCACCTTAATATACAAGACGCCAGAAGAGGACTGCTCTACACTGGGC
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 GCGAACACAGGACACCTCTGATGAAGGCTCTACAATGCCATCAGGAGGCTTGTGCAAATATTCTGATAGAT
 55 TCTGGTGCGATATAAATCTCGTAGATGTGTATGGCAACATGGCTCTCATTATGCTGTTATAGTGGAGAT
 TTTGTCAGTGGTGGCAAAACTGCTGCTCCATGGCAGTCATCGAAGTGCACACAAAGGCTAGCCTCACAC
 CACTTTACTATCCATAACGAAAAGAAGTGGAGCAAATTGTGGATAAAAATGCAAATGCG

AATGCAGTTAATAAGTATAAATGCCACAGCCCTCATGCTTGCTGTATGTCATGGATCATCAGAGATAGTTGG
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 5 AATACCAATCCAGAAGGAACATCTGCAGGAACACCTGATGAGGCTGCACCCTGGTGGAAAGAACACCTGACACGG
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 10 TGCAAAAGAACATCTGAGAAATTACGTGGCCAGCAAAGGAAGACCTAGGAAGATCGCATGGGAGAAAA
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 GGAAGACCTAGGAAGATCGCATGGAGAAAAAGAACACCTGTAAGACTGGATGCGTGGCAAGAGTAAC
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 15 CAAAAGCAAGTGCCTAACATGATCAGAGGTTCCATCAGAACATCCAAACAGAGGAAGATGAAGAATTCTTGT
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 20 GCAAAAGTCTGCTCCAAATAAGCCTTGGATTGAAAATGAAACAAACATTGAGAGCAGATGAGATACTCC
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 CAGAAGGATGTGTGTTACCCAGGCTGCGCATCAAAGAACATGAGAAAATTAGAACATGAAAG
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 25 ATGCAAAAGTCTGTTCCAATAAGCCTTGGATTGAGAACAAACATTGAGAGCAGATGAGATACT
 CCCATCAGAACATCCAAACAAAGGACTATGAGAAAAGTTCTGGGATTCTGAGAGTCTGTGAGACTGTT
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 30 AAATGCAAAAGTCTGTTCCAATAAGCCTTGGATTGAGAACAAACATTGAGAGCAGATCAGATG
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 35 GTCAGAACAGAACATCAAACATTGAGAACACAAAGTTAAATGGGAAACAGAGCTCTGCAGTG
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 40 AAACACCAATACCAGGAAAAGGAAATAACTTGAAGGACATTAAGATTTAAAGAACAAAGAACATGCTGA
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 45 GTAGTACGATATATAACAATGAGGTGCTCCATCAACCACTTCTGAGCTCAAGGAAATCCAAAAGCCTA
 AAAATTAAATCTCAATTATGAGAACAGAACATGAGAACACATTGAGAACACATTGAAAGAACATGCA
 CCAACGTGAAACACAGTGTCAAATGAGAACAGAACATGATCAAACAGAACAGAACATGAAAC
 AACACACTGAACAGCAGGAGTCTCTAGAACATTGAAACTACAAAGAACAAATGAGAAC
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 50 GAGGAAAATGCAACATCATCTCTAAAGAGAAAATGAGGAGATTTAATTACAATAACCATTAAAA
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SEQ ID NO.: 6: BFA5 Amino Acid Sequence

MTKRKKTTINLNQDAQKRTALHWACVNGHEEVVTFLVDRKCQLDVLDGEHRTPLMKALQCHQEACANILIDSGADINL
VDVYGNMALHYAVYSEILSVVAKLLSHGAVIEVHNKASLTPLLSITKRSEQIVEFLLIK NANANA VNKYKCTALMLA
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5 TPDTAESLVEKTPDEAAPLVERTPDATAESLVEKTPDEAASLVEGTSDKIQCLEKATSGKFQS AETPREITSPAKET
SEKFTWPAKGRPRKIAWEKKEDTPREIMSPA KETSEKFTWAAKGRPRKIAWEKKE TPVKTGCVARVTSNKT KVLEKGR
SKMIA CPTKESSTKASANDQRFPSESKQEEDEEYSCDSRSLFESSAKIQVCIPESIYQKVM EINREV EPPKKPSAFK
PAIEMQNSVPNKA FELKNEQTLRADPMFPPESKQKDYEEN SWDSES L CTVSQKDVC LPKATHQKEIDKINGKLEESP
10 NKDGLLKATCGMKVSIPTKALELKDMQTFKAEPPGKPSAFEPATEMQKSVPNKALELKNEQ TWRAD EILPSESKQKDY
EEN SWDTE SL CTVSQKDVC LPKA AHQKEIDKINGKLEGSPVKDGLLKANC GMKVSIPTKALELMDM QT PKAEPPEKP
SAFEPAIEMQKSVPKALELKNEQTLRADEILPSESKQKDYEESSWDSES L CTVSQKDVC LPKATHQKEIDKINGKL
15 EESP DNDGFLKAPCRMKVSIPTKALELMDM QT PKAEPPEKPSAFEPAIEMQKSVPKALELKNEQTLRADQMFPSESK
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KKKFCV LKKKLSEAKEIKS QLENQKVWEQELCSVRLTLNQEEEKRRNADILNEKIREELGRIEEQHRKELEVQQLE
QALRIQDIELKS VESNLNQVSHTHENENYLLHENCMLKKEIAMLKLEIATLKHQYQEKENYFEDI KILKEKNAELQM
TLKLKEESLT K RASQYSGQLKVLIAENTMLTSKLKEKQDKEILEAEIESHHPR LASAVQHDQIVTSRKSQEP AFHIA
GDA CLQRKMNV DV S STIYNNEV LH QPLSEAQRKSKSLKINL NYAGDALRENTLVSEHAQRDQRETQCQMKEAEH MYQN
EQDNVN KHTEQ QESLDQKL FQLQS KNMWLQQQLV HAHKKADNKS KITIDIHL ERKM QHILLKEKNEE I FN YNNH LKN
RIYQYEKEKAETENS